REMARKS

The Non-Final Office Action mailed February 12, 2008, has been received and reviewed. Prior to the present communication, claims 1-66 were pending in the subject application. All claims stand rejected. Each of claims 1-21, 23-43, and 45-59 has been amended herein, while no claims have been cancelled or added. Thus, claims 1-66 remain pending. It is respectfully submitted that no new matter has been added by way of the present amendments. Claims 23-44 stand rejected under 35 U.S.C. § 101. Claims 1-7, 9-17 and 20-29 stand rejected under 35 U.S.C. § 102(b). Claims 8, 18, 19, 30, 40, 41, 52, 62 and 63 stand rejected under 35 U.S.C. § 103(a). Claims 1-66 stand rejected under 35 U.S.C. § 112. Reconsideration of the subject application is respectfully requested in view of the above amendments and the following remarks.

Support for Claim Amendments

Independent claims 1 and 45 have been amended herein to recite a clarification of the process of normalizing the data of various sources such that the data is comparable to expected performance data. Support for these claim amendments may be found in the Specification, for example, at pg. 3, ll. 14 and 15, at pg. 7, l. 19 to pg. 9, l. 19, and at pg. 16, ll. 3-29. Claims 23 and 45 have been amended herein to expand on the process of diagnosing a cause for underperforming search result to include utilizing the cause to select from a set of predefined corrective actions. Support for this amendment may be found in the Specification, for example, at pg. 16, ll.3-29, and at FIG. 5B.

In general, amendments to the claimed subject matter is not "new matter" within meaning of 35 U.S.C. § 132 or Rule 118 of Patent Office Rules of Practice, unless it discloses an invention, process, or apparatus not theretofore described. Further, if later-submitted material

simply clarifies or completes prior disclosure it cannot be treated as "new matter."[1] Accordingly, because these amendments are inherent in the procedure of normalizing data and diagnosing causes for underperforming data, as disclosed in the Detailed Description, the newly recited subject matter does not constitute new matter.

Objections to the Claims

Claims 3, 15, and 18, are objected to for not corresponding to claims 25, 59, and 40, respectively. Claims 15 and 59, and claims 18 and 40 now recite subject matter that is substantially comparable, while the scope of 3 remains distinct from the scope of claim 25. Further, claim 59 is objected to for omitting a term in the phrase "diagnosing at least one possible [____] for an underperforming search result." The omitted term of "cause" has been added to clarify the phrase above.

Rejections based on 35 U.S.C. § 101

Claims 23-44 stand rejected under 35 U.S.C. § 101 for being directed toward non-statutory subject matter. In particular, it is stated in the Office Action at page 4, ¶ 5 that claims 23-44 lack a useful, concrete, and tangible result, because the system appears to be directed at software per se. In response, independent claim 23 has been amended herein, per the suggestion of the Examiner, to recite hardware elements within the computer to implement the automated search result optimization system. Accordingly, claim 23, as amended, is within the four statutory categories of invention, and provides a useful, concrete, and tangible result, as discussed below.

[1] *Triax Co. v Hartman Metal Fabricators, Inc.,* 479 F2d 951 (1973, CA2 NY); cert. denied, 94 S. Ct. 843 (1973).

First, independent claim 23, as amended hereinabove, is limited to tangible embodiments. "When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since the use of technology permits the function of the descriptive material to be realized."[2] Because claim 23 is directed to a "system implemented in a computer" having material components within the system that carry out particular functions, this claim constitutes physical articles that fall within the statutory classes.

Second, independent claim 23 is functional. That is, this claim recites process steps of, at least automatically adjusting operation of the search engine, wherein the adjusted operation of the search engine improves the performance of a search result by tailoring a ranking of subsequent search results in accordance with the collected input performance data. These recited steps add function to the claimed computer system of claim 23.

As such, it is respectfully submitted that amended claim 23 is directed toward statutory subject matter. Further, each of claims 24-44 is believed to be in condition for allowance based, in part, upon their dependency from independent claim 23, and such favorable action is respectfully requested.

Rejections based on 35 U.S.C. § 112, First Paragraph

Claim 40 stands rejected under § 112, first paragraph, for failing to comply with the written description requirement. In particular, the Office states there is no support for the

[2] MPEP § 2106.01. *See*, *In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994) (discussing patentable weight of data structure stored on a computer readable medium that increases computer efficiency); s*ee also*, *In re Warmerdam*, 33 F.3d 1354, 1360-61 (discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency).

negative limitation of "without changing the spelling or creating a variation of the search term." In response, this feature is removed from claim 40.

Prior to the present communication, claim 23 recited the phrase "to performance data," which the Office considered indefinite as it is unclear to what type of performance data the phrase was referring. Claim 23, as amended herein, definitely claims each type of performance data, and this rejection is considered traversed.

Claims 1-66 are rejected as being indefinite for failing to point out and distinctly claim the subject matter which the Applicants regards as their invention. In particular, the Office contends that independent claims 1, 23, and 45 recite the phrase "greater significance" making the scope of these claims unascertainable. In response, this phrase has been removed from the independent claims. Thus, it is submitted by the Applicants that claims 1, 23, and 45, and the claims that depend therefrom, are now in compliance with § 112.

Rejections based on 35 U.S.C. § 102

A.) Applicable Authority

Anticipation "requires that the same invention, including each element and limitation of the claims, was known or used by others before it was invented by the patentee."[3] "[P]rior knowledge by others requires that all of the elements and limitations of the claimed subject matter must be expressly or inherently described in a single prior art reference."[4] "The single reference must describe and enable the claimed invention, including all claim limitations,

[3] MPEP § 2131, *passim*; *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 299, 302 (Fed. Cir. 1995).

[4] *Elan Pharms., Inc. v. Mayo Foundation for Medical Educ. & Research*, 304 F.2d 1221, 1227 (Fed. Cir. 2002) (citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999); *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)).

with sufficient clarity and detail to establish that the subject matter already existed in the prior art and that its existence was recognized by persons of ordinary skill in the field of the invention."[5]

B.) Rejection Based on U.S. Patent No. 6,434,550 to Warner et al.

Claims 1-7, 9-17, 20-29, 31-39, 42-51, 53-61, and 64-66 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,434,550 to Warner et al. (hereinafter the "Warner reference"). As the Warner reference does not describe, either expressly or inherently, each and every element of the amended independent claims 1, 23, and 45, Applicants respectfully traverse the rejection of these claims, as hereinafter set forth.

Independent claim 1, as amended hereinabove, recites, a method for automating the optimization of search results displayed in a search Web page. In particular, the method includes, in part, "receiving search results provided from a search engine to a user according to a search term," where "the search results are selected and ranked by a relevance schema," collecting data that represents a performance of each of the provided search results, the *collected data quantifying interactions of various users with the search results, the collected data originating from at least one of a plurality of various sources having various types of valuations*" (emphasis added). In this way, the performance data from multiple users may be monitored thereby keeping pace with the rapid changes in likely searchable content based on popular trends or topical events in the news.[6] In addition, the collected data may have various types of valuations that are not easily combinable, such as a CTR and a completed survey.[7]

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[5] *Id.* (emphasis added)(citing *Crown Operations Int'l, Ltd. v. Solutia Inc.*, 289 F.3d 1367, 1375 (Fed. Cir. 2002); *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990)). *See also, PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996).
[6] Specification at pg. 1, ll. 9-19.
[7] Id. at pg. 7, ll. 20-30.

The Warner reference does not describe collecting data that quantifies interactions of various users with the search results, where the collected data originates from at least one of a plurality of various sources having various types of valuations. Rather, the Warner reference describes collecting data from a single user, such as an initial selection or an action subsequent thereto.[8] Accordingly, the search engine of the Warner reference is tuned to each individual user and will not be influenced by trends outside the user.

In addition, claim 1, as amended, recites, in part, combining the collected data by a normalization procedure that describes the user's interactions with the search results in accordance with a relative importance of the source of the data that generates performance data for each of the search results, wherein the performance data reflects behavior of the various users." In particular, the normalization procedure includes "(1) aggregating the collected data from the various sources," "(2) compiling various types of valuations, associated with the aggregated data, into common measurements," "(3) weighting the common measurements based on relative importance of the various sources," where "the relative performance is a reflection of the value of each of the various sources as a predictor of relevance of the search results," and "(4) normalizing the weighted common measurements to determine performance data associated with each of the search results such that the search results are comparable against each other and search results indicated by expected performance data." In this way, the data from various sources is (a) collected, (b) compiled to a common measurement, (c) weighted according to a relative importance of the originating source, and (d) normalized to derive performance data that indicates actual performance of a search result.

[8] *See Warner reference* at col. 5, ll. 46-41.

The Warner reference does not normalize the data it receives from the user. Instead, the Warner reference assigns a particular rate adjustment to each action received from the user.[9] These rate adjustments are applied to a relevancy rating incrementally upon receiving each action. Upon application, the relevancy rating is adjusted in value by a predefined amount and stored in an index, then accessed upon the indication of a next user action.[10] Accordingly, the Warner does not explicitly or inherently describe a process of normalizing.

A fortiori, Warner teaches away from normalizing data from various sources. In particular, the Warner reference teaches away from combining various user inputs in stating the user actions are processed individually, in isolation from other actions (see above). These actions are each assigned a predetermined amount (e.g., a one-to-one relationship) such that upon receiving a particular user action, the relevance rating is adjusted by a predetermined amount. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path the Applicants took.[11] Here, because Warner teaches that processing the user actions in isolation—as opposed to receiving differing types of inputs from various external sources and combining the inputs—is the method for adjusting a relevancy rating, one skilled in the art upon reading Warner would have been led on a path divergent from that taken by Applicants' claimed invention.

Even further, claim 1, as amended herein, recites, in part, "determining whether the expected performance data falls short of the normalized performance data by comparing the normalized performance data to the expected performance data for each of the search results"

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[9] *Id.* at col. 5, ll. 35-65.
[10] *See generally id.* at col. 6, ll. 1-9.
[11] *In re Gurley*, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994).

and "when the expected performance data of a search result of the search results falls short of the normalized performance data associated therewith, identifying the search result as underperforming and diagnosing the underperforming search result based on results of the comparison." In this way, the performance data (representing actual performance of each of the search results), computed in part by the normalization procedure discussed above, is compared to expected performance data (representing a predetermined/updated estimated performance of each of the search results).

The Warner reference does not describe the step of comparison. Rather, the Warner reference describes a relevancy rating that is updated a predetermined amount that is based on, and triggered by, a user action.[12] This relevance rating seems substantially comparable to expected performance data; however, these is no other performance-related metric that is compared against the relevance rating. Moreover, there is no discussion of identifying an underperforming search result based on this comparison. Even further, the Warner reference does not explicitly or inherently disclose diagnosing a search result identified as underperforming based on results of the comparison.

Further yet, the amended claim 1 recites, "updating the relevance schema based on the diagnosis such that operation of a search engine that provided the search results is adjusted to improve relevance of subsequent search results." In this way, the relevance schema is adjusted to promote or demote a ranking of a search result in accordance with the diagnosis, thus, maintaining a relevant order of results with respect to a multitude of users. The Warner reference does not describe utilizing a diagnosis based on a comparison to adjust the relevancy rating or the operation of the search engine.

[12] *See Warner reference* at col. 5, ll. 22-35.

Accordingly, Warner does not explicitly or inherently teach all the features of claim 1. As such, for at least the reasons stated above, Applicants submit that claim 1 is not anticipated by Warner and is in condition for allowance. Each of claims 1-7, 9-17, and 20-22 believed to be in condition for allowance based, in part, upon their dependency from claim 1, and such favorable action is respectfully requested.[13]

Independent claim 23, as amended herein, recites an automated search result optimization system implemented in a computer that provides search results to a user. In particular, the system includes, in part, "a comparison processor to *compare the collected input performance data of the search result to an expected performance* of the search result," and "a diagnostic processor to *determine, based on the comparison, whether the collected input performance data diverges from the expected performance by a quantified threshold*, and if so, identify the search result as underperforming and *diagnose the underperforming search result utilizing results of the comparison to select from a set of a set of predefined corrective actions*, wherein one of the set of corrective actions is implementing an adjustment processor" (emphasis added). In this way, (a) collected input performance data is compared against expected performance of a search result to determine a divergence between the two, (b) the divergence is compared to a predefined threshold, (c) if the divergence is greater than the threshold, the search result is diagnosed, and (d) based on the diagnosis, a corrective action is selected from a set of predefined corrective actions. As discussed above, the Warner reference does not teach these features of the claimed invention listed above. Instead, the Warner reference disclsoes an incremental process of adjusting a relevancy rating. For instance, the Warner process is summarized as follows:

[13] *See* 37 C.F.R. § 1.75(c) (2006).

> When a user selects and retrieves an informational item through a list of index entries presented by the retrieval system as a result of a search, the relevancy ratings of the selected information item is increased by a predetermined amount. The relevancy rating of the selected information items is further adjusted based on any actions the used takes subsequent to the initial selection of the informational item.[14]

This process does not explicitly or inherently consider determining if a diagnosis should be performed, nor does Warner disclose selecting a corrective action based on the diagnosis.

As such, for at least the reasons stated above, Applicants submit that claim 23 is not anticipated by Warner and is in condition for allowance. Each of claims 24-29, 31-39, and 42-44, is believed to be in condition for allowance based, in part, upon their dependency from claim 23, and such favorable action is respectfully requested.[15]

Independent claim 45, as amended herein, recites one or more computer-accessible media having instructions stored on the media for facilitating the automated optimization of a search result in a search result user interface. In particular, the instructions include, in part, "normalizing the collected performance data," "comparing the normalized performance data against the expected performance data for the search result," "based on the comparison, determining whether the collected performance data diverges from the expected performance by a quantified threshold and identifying a search result, of the search results, as underperforming when it is associated with divergent collected performance data," "diagnosing at least one possible cause for the underperforming search result based on a result of the comparison between the normalized performance data and the expected performance data," and

[14] *Warner reference* at col. 3, ll. 45-60.
[15] *See* 37 C.F.R. § 1.75(c) (2006).

"utilizing the at least one possible cause to select from a set of predefined corrective actions, wherein one of the set of corrective actions is adjusting an operation of the search engine, wherein adjusting the operation of the search engine in accordance with the collected performance data." As discussed above, the Warner reference does not describe (a) normalizing the collected performance data, (b) comparing the normalized performance data against the expected performance data for the search result, and (c) diagnosing at least one possible cause for the underperforming search result based on a result of the comparison.

Further, the possible cause is utilized to select from a set of predefined corrective actions, where one of the set of corrective actions is adjusting an operation of the search engine, as recited by claim 45. Warner does not discuss a diagnosis or corrective actions, let alone selecting from a set of corrective actions based on a diagnosis. As such, for at least the reasons stated above, Applicants submit that claim 45 is not anticipated by Warner and is in condition for allowance. Each of claims 46-51, 53-61, and 64-66, is believed to be in condition for allowance based, in part, upon their dependency from claim 45, and such favorable action is respectfully requested.[16]

Rejections based on 35 U.S.C. § 103

A.) Applicable Authority

Title 35 U.S.C. § 103(a) declares, a patent shall not issue when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The Supreme Court in Graham v.

[16] *Id.*

John Deere counseled that an obviousness determination is made by identifying: the scope and content of the prior art; the level of ordinary skill in the prior art; the differences between the claimed invention and prior art references; and secondary considerations.[17] To support a finding of obviousness, the initial burden is on the Office to apply the framework outlined in Graham and to provide some reason, suggestion, or motivation, found either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the prior art reference or to combine prior art reference teachings to produce the claimed invention.[18] Recently, the Supreme Court elaborated, at pages 13-14 of the *KSR* opinion, that "it will be necessary for [the Office] to look at interrelated teachings of multiple [prior art references]; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by [one of] ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the [patent application]."[19]

B.) Unpatentable Rejection Based upon the Warner reference in view of U.S. Patent Application No. 2003/0172075 to Reisman

Claims 8, 30 and 52 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Warner reference in view of U.S. Patent Application No. 2003/0172075 to Reisman (hereinafter the "Reisman reference"). As the Warner reference and the Reisman reference, whether taken alone or in combination, fail to teach or suggest all of the limitations of the rejected claims, Applicants respectfully traverse this rejection, as hereinafter set forth.

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[17] *Graham v. John Deere Co.*, 383 U.S. 1 (1966).
[18] *See, Application of Bergel,* 292 F. 2d 955, 956-957 (1961).
[19] *KSR v. Teleflex*, No. 04-1350, 127 S.Ct. 1727 (2007).

As discussed above, the primary reference, Warner, fails to teach or suggest all of the limitations of independent claims 1, 23, and 45 (as amended herein), from one of which each of rejected claims 8, 30, and 52 depends, respectively. It is respectfully submitted that the Reisman reference fails to cure at least the above-discussed deficiencies Warner reference. Rather, the Reisman reference is cited for disclosing identifying an operation performed by a user on a search result, such as editing, emailing, printing, bookmarking, and copying.[20] Accordingly, it is respectfully submitted that the Warner and Reisman references, whether taken alone or in combination, fail to teach or suggest all of the features of the claims 1, 23, and 45, and thus, dependent claims 8, 30, and 52 are in condition for allowance.[21]

C.) Unpatentable Rejection Based upon the Warner reference in view of U.S. Patent No. 6,326,962 to Szabo

Claims 18, 19, 40, 41, 62, and 63 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Warner reference in view of U.S. Patent No. 6,326,962 to Szabo (hereinafter the "Szabo reference"). As the Warner reference and the Szabo reference, whether taken alone or in combination, fail to teach or suggest all of the limitations of the rejected claims, Applicants respectfully traverse this rejection, as hereinafter set forth.

As discussed above, the primary reference, Warner, fails to teach or suggest all of the limitations of independent claims 1, 23, and 45 (as amended herein), from one of which each of rejected claims 18, 19, 40, 41, 62, and 63 depends, respectively. It is respectfully submitted that the Szabo reference fails to cure at least the above-discussed deficiencies Warner reference. Rather, the Szabo reference is cited for disclosing generating output data to increase the search

[20] See Office Action at pg. 14, ¶ 2.

engine's spellchecker tolerance without changing the spelling or creating a variation of the search term.,[22] and for disclosing prompting the user to clarify or narrow the search term with an additional input.[23] Accordingly, it is respectfully submitted that the Warner and Reisman references, whether taken alone or in combination, fail to teach or suggest all of the features of the claims 1, 23, and 45, and thus, dependent claims 18, 19, 40, 41, 62, and 63 are in condition for allowance.[24]

[21] *See* 37 C.F.R. § 1.75(c) (2006).
[22] See Office Action at pg. 15, ¶ 7.
[23] *Id.* at pg. 17, ¶ 3.
[24] *See* 37 C.F.R. § 1.75(c) (2006).

CONCLUSION

For at least the reasons stated above, claims 1-66 are now in condition for allowance. Applicants respectfully request withdrawal of the pending rejections and allowance of the claims. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned – 816-474-6550 or btabor@shb.com (such communication via email is herein expressly granted) – to resolve the same. It is believed that no fee is due, however, the Commissioner is hereby authorized to charge any amount required to Deposit Account No. 19-2112, referencing attorney docket number MFCP.140315

Respectfully submitted,

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